

## PATENT COOPERATION TREATY

PCT

10/552092

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)REC'D 03 OCT 2005  
WIPO PCT

Applicant's or agent's file reference DSP0304	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. <b>PCT/KR2003/001019</b>	International filing date (day/month/year) <b>23 MAY 2003 (23.05.2003)</b>	Priority date (day/month/year) <b>04 APRIL 2003 (04.04.2003)</b>
International Patent Classification (IPC) or national classification and IPC <b>IPC7 F41B 1/00</b>		
<p>Applicant <b>YANG, Tae-Seong</b></p>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand <b>10 FEBRUARY 2004 (10.02.2004)</b>	Date of completion of this report <b>21 SEPTEMBER 2005 (21.09.2005)</b>
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer LEE, Ik Sang Telephone No. 82-42-481-5419

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/001019

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

 the international application as originally filed the description:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the claims:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the drawings:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the sequence listing part of the description:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: English which is .. the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in written form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4.  The amendments have resulted in the cancellation of: the description, pages \_\_\_\_\_ the claims, Nos. \_\_\_\_\_ the drawings, sheets \_\_\_\_\_5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-6	YES
	Claims		NO
Inventive step (IS)	Claims	1-6	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-6	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

Documents cited in the International Search Report:

D1: US 4,537,176 (David M. Stravitz) 27 OCTOBER 1985

D2: US 3,954,266 (Andrew J. Carrano) 04 MAY 1976

D3: US 3,997,162 (Francis E. Scullin) 14 DECEMBER 1976

The present invention relates to a sucker and an adhesion arrow having the sucker, and more particularly, to a sucker with an annular projection formed on an adhesion surface thereof for adhering while absorbing stepwise an impact generated when it collides against and adheres on an object, and an adhesion arrow having the sucker. A sucker for an adhesion arrow comprising: a dome-shaped adhesion portion made of a flexible material having the resiliency, the adhesion portion including an adhesion surface having a concave shape and a substantially circular boundary to generate a vacuum when the adhesion surface comes into hermetical contact with the flat surface and then is restored to the original shape by the resiliency, and an annular projection protruding by a predetermined width and height from the adhesion surface along a position with a predetermined radius from the center of the adhesion surface; and a fixing portion extending from a back surface of the adhesion portion.

D1 is a blow dart game which comprises a tube having an abutment therein for abutting against a dart which is inserted into the tube, thereby preventing the dart from coming out of the tube and being ingested or swallowed by a user. The abutment may be provided directly on the tube, or on a mouthpiece which is connected to the tube at one end of the tube. The darts have suction cups at the front ends thereof and a seal for providing a substantial air seal against the inner surface of the tube. The dart further has a shock absorbing section at the forward portion thereof to enhance its adherence to non-flat and/or non-perpendicular target surfaces.

D2 is a aerial dart and paddle game. By providing a suction cup dart or shuttlecock in combination with a hand-held paddle or target which incorporates a dart-adhering or holding zone and a dart-rejecting zone, a unique game is provided. Furthermore, the suction cup portion of the dart or shuttlecock is flexibly mounted to the dart body, thereby allowing the shuttlecock or dart to hit the adhering zone of the paddle or target at angles other than merely perpendicular and adhere to the surface.

(Continued on Supplemental Sheet.)

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

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**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

Box V.

D3 is a dart board game which includes a dart, a target board having a target face, and cooperating elements for retaining, on the target face, a removably mounted marker on the dart. Such cooperating elements can consist of cooperating "Velcro" strip material. The dart includes a resilient and flexible portion at which the dart body is removably engaged with the marker, so that upon impact of the dart against the target board, the resilient portion of the dart flexes to allow the Velcro strip to engage without disengagement due to bouncing. This flexing motion compresses the resilient portion, which, as it expands, propels the dart body away from the target board to disengage the dart from the marker.

None of the available prior art discloses a sucker for an adhesion arrow comprising: a dome-shaped adhesion portion made of a flexible material having the resiliency, the adhesion portion including an adhesion surface having a concave shape and a substantially circular boundary to generate a vacuum when the adhesion surface comes into hermetical contact with the flat surface and then is restored to the original shape by the resiliency; and an annular projection protruding by a predetermined width and height from the adhesion surface along a position with a predetermined radius from the center of the adhesion surface; and a fixing portion extending from a back surface of the adhesion portion. Therefore, the subject matter of the claim 1 of the present invention is considered new (Art. 33(2) PCT). As dependent claims, the subject matter of the claims 2-6 is considered new as well (Art. 33(2) PCT).

A sucker for an adhesion arrow comprising: a dome-shaped adhesion portion made of a flexible material having the resiliency, the adhesion portion including an adhesion surface having a concave shape and a substantially circular boundary to generate a vacuum when the adhesion surface comes into hermetical contact with the flat surface and then is restored to the original shape by the resiliency, and an annular projection protruding by a predetermined width and height from the adhesion surface along a position with a predetermined radius from the center of the adhesion surface; and a fixing portion extending from a back surface of the adhesion portion is not fairly suggested in the prior art, and is not rendered obvious from the prior art. Therefore, the subject matter of claims 1-6 appears to inventive step(Art. 33(3) PCT).

The present invention is deemed to have an industrial applicability because it can be used in the dart game industry(Art. 33(4) PCT).